

REMARKS

Claims 1-7 have been amended, and new claims 8-20 have been added. Claims 1-20 are pending, with claims 1, 7, and 14 being independent.

Attached hereto is an Appendix entitled "Version with Markings to Show Changes Made" which is a marked-up version of the portions of the application which have been amended by the present amendment, with brackets indicating deleted matter and underlining indicating added matter.

Claims 1-2 and 7 were rejected under 35 USC 103(a) as being unpatentable over Ohe et al. (Ohe) (U.S. Patent No. 6,300,994).

Claim 3 was rejected under 35 USC 103(a) as being unpatentable over Ohe in view of Mishina et al. (Mishina) (U.S. Patent No. 5,350,539).

Claims 4-6 were rejected under 35 USC 103(a) as being unpatentable over Ohe in view of Mishina and Yu et al. (Yu) (U.S. Patent No. 6,066,696).

These rejections are respectfully traversed insofar as they may be deemed to be applicable to claims 1-7 in their present form and to new claims 8-20.

Independent claim 1 now recites a liquid crystal display device comprising a pair of substrates, a liquid crystal layer held between the pair of substrates, at least one of the pair of substrates being provided with a pair of electrodes for applying a lateral electric field to the liquid crystal layer, and oriented films formed on both of the pair of substrates, wherein an AC residual image which occurs even in a case of driving by pure AC is less than 8%.

Independent claim 7 now recites a liquid crystal display device comprising a pair of substrates, a liquid crystal layer held between the pair of substrates, at

least one of the pair of substrates being provided with at least a pair of electrodes for applying a lateral electric field to the liquid crystal layer, and at least an oriented film formed on the electrodes, wherein an AC residual image which occurs even in a case of driving by pure AC is less than 8%.

New independent claim 14 recites a liquid crystal display device comprising a pair of substrates, a liquid crystal layer held between the pair of substrates, at least one of the pair of substrates being provided with a pair of electrodes for applying a lateral electric field to the liquid crystal layer, at least a protecting film for protecting at least one of the pair of electrodes, and oriented films formed on both of the pair of substrates, at least one of the oriented films being arranged to cover the protecting film, wherein an AC residual image which occurs even in a case of driving by pure AC is less than 8%.

It is submitted that Ohe, Mishina, and Yu do not disclose or suggest the feature of claims 1, 7, and 14 wherein an AC residual image which occurs even in a case of driving by pure AC is less than 8%. This feature of claims 1, 7, and 14 is described, for example, on page 19, line 1, through page 20, line 6, of the specification, and solves a problem in the prior art which was discovered by the applicants as described, for example, on page 2, lines 20-25, of the specification.

The portion of the Examiner's explanations of the rejections of claims 1-7 which appears to be most relevant to this feature of claims 1, 7, and 14 is the following statement with respect to Ohe which appears at the top of page 3 of the Office Action of October 3, 2002:

no visible residual image (col. 1, lines 54-58 and col. 9, lines 42-54) (Applicant's an AC residual image of the oriented films is less than 8 %).

However, it is submitted that the residual image disclosed in Ohe is a DC residual image, rather than an AC residual image which occurs even in a case of driving by pure AC. Accordingly, it is submitted that Ohe does not disclose or suggest the feature of claims 1, 7, and 14 wherein an AC residual image which occurs even in a case of driving by pure AC is less than 8%.

Nor is it seen where this feature of claims 1, 7, and 14 is disclosed or suggested by Mishina and Yu, which were relied on by the Examiner only to show features recited in claims 3-6.

Since Ohe, Mishina, and Yu do not disclose or suggest the feature of independent claims 1, 7, and 14 discussed above, it is submitted that independent claims 1, 7, and 14 and claims 2-6, 8-13, and 15-20 depending therefrom patentably distinguish over Ohe, Mishina, and Yu in the sense of 35 USC 103(a), and it is respectfully requested that the rejections of claims 1-7 under 35 USC 103(a) as being unpatentable over Ohe, Mishina, and Yu be withdrawn.

Although dependent claims 2-6, 8-13, and 15-20 are considered to be allowable by virtue of their dependency from allowable independent claims 1, 7, and 14, it is noted that these dependent claims also recite further features of the present invention which are not seen to be disclosed or suggested by the prior art.

It is submitted that all of the Examiner's rejections have been overcome, and that the application is now in condition for allowance. Reconsideration of the application and an action of a favorable nature are respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (1113.40340X00).

Respectfully submitted,

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Attachment

APPENDIX

VERSION WITH MARKINGS TO SHOW CHANGES MADE

Changes made to the application by the present amendment are indicated below, with brackets indicating deleted matter and underlining indicating added matter.

IN THE CLAIMS

New claims 8-20 have been added.

Claims 1-7 have been amended as follows:

--1. (Amended) A liquid crystal display device comprising:

a pair of substrates; [and]

a liquid crystal layer held between the pair of substrates;[,]

at least one of the pair of substrates being provided with [plural] a
pair of electrodes for applying [an] a lateral electric field to the liquid crystal
layer;[,]
and

[a protecting film for protecting at least one of the plural electrodes
and]

oriented films formed on both of the pair of substrates; [to cover
the protecting film or the electrodes, characterized in that]

[the film thickness of the protecting film is in the range of from 0.1 μm to 0.7 μm , and]

wherein an AC residual image [of the oriented films] which occurs even in a case of driving by pure AC is less than [8 %] 8%.

2. (Amended) [The] A liquid crystal display device according to claim 1, [characterized in that] wherein a specific resistance of the liquid crystal layer is $10^{10} \Omega \cdot \text{cm}$ or more.

3. (Amended) [The] A liquid crystal display device according to claim 1, [or 2, characterized in that] wherein at least one of the oriented films is an organic polymer containing at least one of a polymer and an oligomer in which a weight substance with a long-chain alkyl group applied to an amine component or an acid sentence is at least [5 %] 5% and at most [30 %] 30% of the total molar amount.

4. (Amended) [The] A liquid crystal display device according to claim 3, [characterized in that] wherein a weight average molecular weight of the polymer and the oligomer is at least 2,000 and at most 30,000.

5. (Amended) [The] A liquid crystal display device according to claim 3, [or 4, characterized in that] wherein the polymer and the oligomer contain a long-chain alkylene group of at least one of a main chain type and a terminal type.

6. (Amended) [The] A liquid crystal display device according to [any of claims] claim 1, [to 5, characterized in that] wherein at least one of the oriented [film] films is an organic polymer of a polymer and/or oligomer amic acid imide type, a polymer and/or oligomer amide-imide type, a polymer and/or oligomer imidosiloxane type, or a polymer and/or oligomer amide-imide type containing a long-chain alkylene group.

7. (Amended) A liquid crystal display device comprising:
a pair of substrates; [and]
a liquid crystal layer held between the pair of substrates;[,]
at least one of the pair of substrates being provided with at least a pair of electrodes for applying [an] a lateral electric field to the liquid crystal layer;[,] and
[protecting films for protecting the plural electrodes and]
at least an oriented [films] film formed on [the protecting films and] the electrodes;[, characterized in that]
[the film thickness of the protecting films is less than 0.5 μm , and]
wherein an AC residual image [of the oriented films] which occurs even in a case of driving by pure AC is less than [8 %] 8%.--